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A WHAT'S NEW IN POTATOES?

Recorded by Ernie Moore and M. L. DuMars, Office of Information, U. S. Department of Agriculture, April 24, 1945. Script by Josephine Hemphill. Time, without announcer's parts, seven minutes, 16 seconds.

ANNOUNCER: (LIVE) And now by transcription...from the United States Department of Agriculture...a report on new and better varieties of potatoes.

The goal for potatoes is over three million acres this year -- 3,137,000. Early in April, War Food Administrator Jones urged farmers to plant up to their goals. Said the War Food Administrator: "Nothing is more important in the entire war effort than for farmers to drive ahead with their production schedules despite wartime handicaps...."

Well, in spite of wartime handicaps farmers in 48 States are growing potatoes. During the past 25 years, thanks to science, the average yield per acre has been increased more than 30 percent -- and we have potatoes high in quality, resistant to bugs and blights, and mighty good eating! But listen to the story, as told by Ernie Moore and Duke DuMars, of the United States Department of Agriculture.

TRANSCRIPTION

ERNIE MOORE: Duke, suppose we start with a question.

DUKE DUMARS: One I can answer?

MOORE: I think so. Why does New York City have so many Irish policemen?

DUMARS: That's a catch question.

MOORE: Not if you know the history of the Irish potato.

DUMARS: I know it isn't Irish. It's South American. Through the courtesy of Spanish explorers, potatoes went to Spain -- the rest of Europe -- and the British Isles.

MOORE: Including the Emerald Isle.

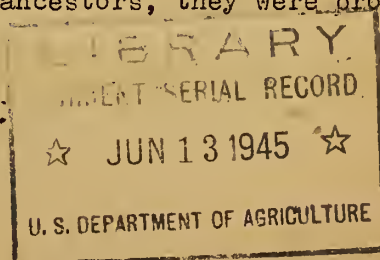
DUMARS: But that doesn't explain the Irish policemen.

MOORE: Let that go for a minute. You know when potatoes reached North America?

DUMARS: No.

MOORE: In 1719. But like their South American ancestors, they were probably small and knobby, with deep-set eyes.

DUMARS: Glad I didn't have to peel 'em.



MOORE: It must've been quite a job. Well, for the next hundred years people in this country didn't do much to improve the potato -- but during the second hundred years, from about 1820, things really began to happen. Over 200 new varieties were originated, and one of these was the work of the Reverend C. E. Goodrich of Utica, New York.

DUMARS: Why was a clergyman interested?

MOORE: For a very good reason. Do you remember what happened in Ireland, in 1845?

DUMARS: The great famine.

MOORE: During the years 1843 to 1847 a terrible blight spread over the potato crops of Europe, Great Britain, and America. Ireland was hardest hit of all. I think you'll be interested, Duke, in a letter I have here -- from a paper published in England in 1845. Want to read it?

DUMARS: Certainly. "But the great distress of the farmer is the total failure of the potato crop. Up to Monday last the promise was the most abundant ever known....In one night the mischief was done; the whole of the stalk and leaf turned as black as your hat, and the potatoes rotted in the ground...."*

MOORE: The disease got worse and worse, and in Ireland -- in the "black summer of 1846" -- thousands of people died, and thousands of others left for the New World. During the next ten years over two million people emigrated -- mostly to the United States -- and many stopped in New York.

DUMARS: So that's why New York has so many good Irishmen!

MOORE: Including -- policemen. Now let's go back a hundred years to the time of Reverend Goodrich. Like so many others, he believed that the dread "potato disease" was caused by "running-out," or degeneration. They didn't know then that it was a blight, caused by a fungus.

DUMARS: You mean they thought potatoes just kind of naturally "wore out"?

MOORE: That's right. And they thought the only way to restore their vigor was to grow them from true seed. You know what "true seed" looks like.

DUMARS: It grows in fruits at the top of the plant. In little green balls. They look like green tomatoes.

MOORE: And each ball contains about 200 tiny seeds.

DUMARS: But this "true seed" doesn't develop under ordinary conditions.

MOORE: No, it doesn't. As you may have noticed -- the plant-breeders at the Research Station in Beltsville, Maryland, keep the potato greenhouses very cool and well-lighted.

DUMARS: They use artificial light.

* From the "Agricultural Report," Commissioner of Patents, 1845. Page 548.

MOORE: It lengthens the day to 16 or 18 hours. Nearly all new varieties of potatoes come from true seed -- and that's what Reverend Goodrich started out with. The seed he used came from plants he got from South America, and from one seedling he produced the famous "Garnet Chili." This became the ancestor of 170 new varieties -- including Burbank, Early Rose, Green Mountain, and Triumph. All good potatoes.

DUMARS: But they're not resistant to late blight. That's what he was working for.

MOORE: No, Reverend Goodrich never did get a potato resistant to late blight, but other plant-breeders carried on. Workers at State Experiment Stations, and the Department of Agriculture. In 1910 Dr. William Stuart was put in charge of the work for the Department, and it wasn't long before he and his co-workers made a very important discovery. They found that virus diseases...such as "mild mosaic" ...are even worse than the blight that caused the famine.

DUMARS: Why is mosaic worse than blight?

MOORE: You can control late blight -- or at least hold it in check -- with Bordeaux mixture. But you cannot control "mosaic" by spraying. Now....ever hear of the National Potato Breeding Program?

DUMARS: Isn't Dr. F. J. Stevenson* in charge?

MOORE: Yes -- and he also heads up the potato breeding work at Beltsville. The National Program is carried on by the Department of Agriculture and around 30 State Experiment Stations. If they find, in their testing, any one seedling that turns out to be better than the old varieties, in at least one important character -- such as disease-resistance -- then it's released to growers, in whatever part of the country it grows best.

DUMARS: How many new varieties -- distributed under this National Program -- are on the Certified Seed List for 1944?

MOORE: Seventeen. Katahdin was the first to be introduced under the new Program. The early work on Katahdin was done while Dr. C. F. Clark was in charge. In 12 years, it's become one of the most important varieties in the country, and the most widely adapted of all late varieties. Katahdin is resistant to mild mosaic, leaf roll, and net necrosis.

DUMARS: But not resistant to late blight.

MOORE: That's the next part of the story. As soon as the plant-breeders put the viruses in their place, they started all over again to get a potato resistant to late blight. And it was high time. In 1932, in Maine alone, losses from late blight were over nine million bushels. So the plant-breeders went to work at Presque Isle, Maine. And finally they got a seedling -- Number 44,488, later named Sebago -- that proved to be vigorous in growth, high in yield, and resistant to late blight.

DUMARS: Success at last.

* Principal Geneticist, Division of Fruit and Vegetable Crops and Diseases, Bureau of Plant Industry, Soils, and Agricultural Engineering.

MOORE: And greater success to come.

DUMARS: They have something better than Sebago?

MOORE: Oh, yes! They've got varieties much more resistant to blight -- but these haven't been named yet. They just go by numbers in the plant-breeder's book -- till they can prove themselves worthy in other respects too. But it looks as if some day they'll be able to really wipe out the disease...that caused so much trouble a hundred years ago.

DUMARS: That would be a real triumph.

MOORE: It certainly would. And now let's turn for a minute to another phase of plant-breeding. What do you know about the new insect-resistant potato called "Sequoia"?

DUMARS: Well -- wasn't it developed in North Carolina?

MOORE: It was. One day in 1932, the man in charge of the experimental potato plots sent Dr. Stevenson a hurry-up call. They said if he wanted to take a look at their seedlings before they were all killed by late blight -- he'd better come down there right away. So he went down to Raleigh -- and then he and some of the men from the Experiment Station drove on over to the western part of the State to see the blighted seedlings. But when they got there -- they found it wasn't blight, after all.

DUMARS: What was it?

MOORE: It was hopper burn.

DUMARS: Caused by leafhoppers?

MOORE: Yes. As Dr. Stevenson says, "Some of those babies were just about gone, and some looked very happy." So they took the "happy" seedlings, and after experimenting for seven years -- they finally selected a new variety -- resistant to leafhoppers and flea beetles.

DUMARS: Proving there's more than one way to outwit the pesky things!

MOORE: There certainly is. And now they're trying to get more varieties resistant to insects -- as well as resistant to diseases, higher in yield, better in quality, better in shape, --

DUMARS: With shallow eyes -- to make 'em easier to peel?

MOORE: Yes -- and easier to clean before marketing. Have you any idea...how many inherited characteristics the plant-breeders have to work with?

DUMARS: Well -- not exactly.

MOORE: More than twenty.

DUMARS: Do you think they'll ever get all these good characteristics in one single variety of potato?

MOORE: Why not? Quoting Dr. Stevenson, "Building up new varieties is merely a matter of analysis and synthesis."

DUMARS: Is that all?

MOORE: Sure. They've got all those good characters to work with. If they just keep plugging away -- take 'em apart and put 'em together again in new combinations -- some day they may get the perfect combination, and we'll have the ideal potato.

ANNOUNCER: (LIVE) You've heard Ernie Moore and Duke DuMars, of the United States Department of Agriculture, in Number 14 of a series on "Farm Science Serves the Nation."

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